

ISOTRIA MEDEOLOIDES, THE SMALLER WHORLED POGONIA, NEW TO CANADA

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The orchid genus *Isotria* is very rare in Canada and is known from only a few records. Previous records have been for *Isotria verticillata* (Willd.) Raf. which is known from one old record from Middlesex County and currently from a site in Norfolk County, Ontario.

On April 26, 1977, while on a fern foray near Calton Swamp in Elgin County, Ontario, attention was attracted to two overwintering stems of what appeared to be an orchid of the genus *Isotria*.

Its vernal appearance was first recorded on May 19 when two monocotyledonous stalks had appeared about 8 cm. above the leafy humus. By May 22 each had expanded into the characteristic whorl of leaves and terminal flower bud and were 15 cm. tall.

Initially its identity was assumed to be *Isotria verticillata* (Willd.) Raf. commonly known as the Whorled Pogonia which had been recorded previously from Ontario and is certainly the more common of the two species of *Isotria* in North America.

By May 26 the plants had reached anthesis and were 22 cm. tall (Figure 1). On May 31 the plants had been in flower for five days and I became curious about some discrepancies between literature descriptions and the plants at the site.

Although I had had no previous field experience with the genus *Isotria* it became clear to me that these plants were not the Whorled Pogonia but the Smaller Whorled Pogonia, *Isotria medeoloides* (Pursh.) Raf. The plants were smaller than the descriptions of the Whorled Pogonia and the sepals were much shorter and less spider-like in appearance. In addition, they had shown no tendency to produce any purple coloration, either on the lip and sepals of the flower or on the stem of the plant itself.

The descriptions for *Isotria medeoloides* fit these plants exactly and all the details of habitat and flowering were suitable. However, one problem still remained. *Isotria medeoloides* had not been previously reported from Canada.

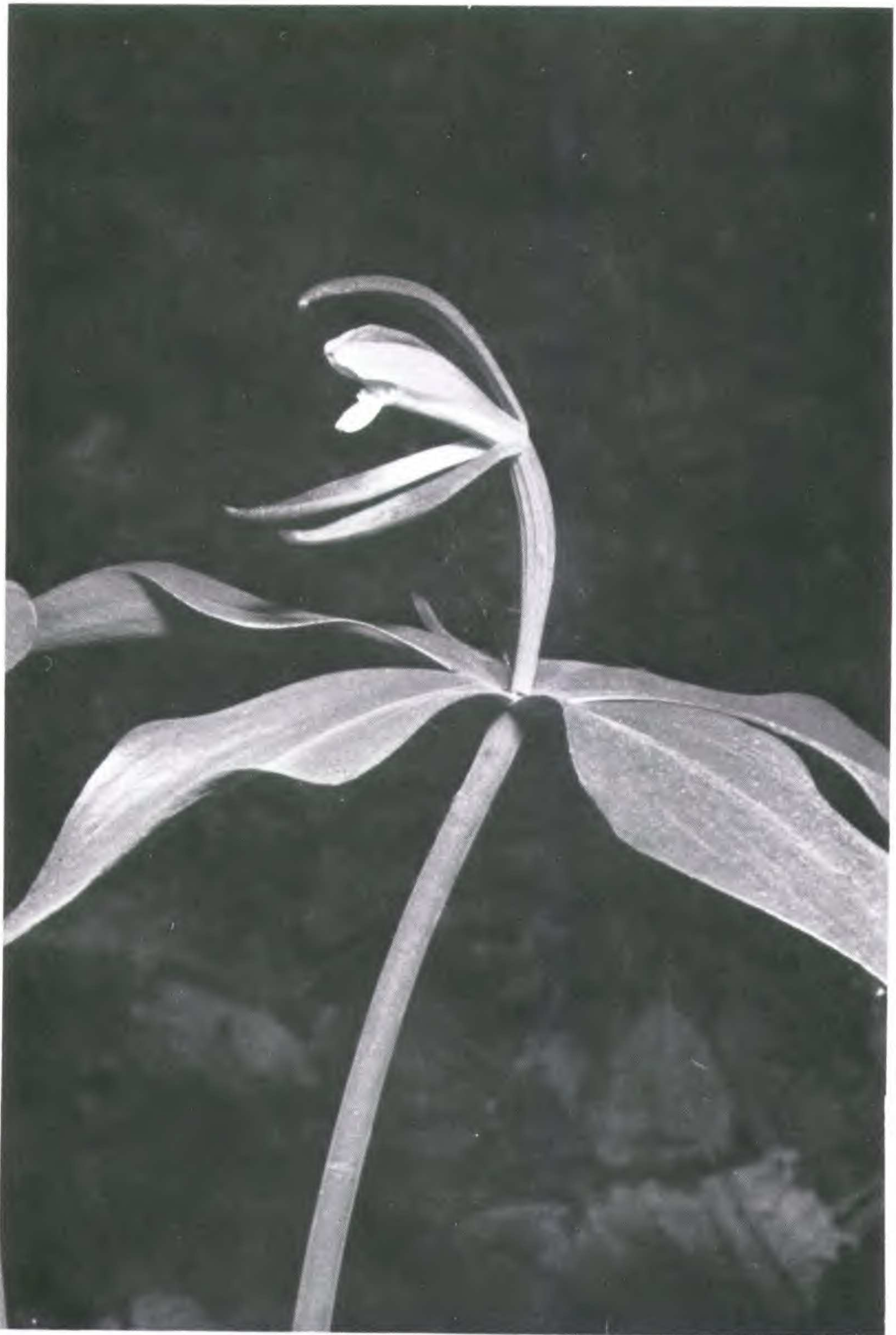


Figure 1. *Isotria medeoloides* (Willd.) Raf. in Elgin County, Ontario.

Its range in North America is given as New England, New York, Pennsylvania, New Jersey, Virginia, North Carolina and Missouri (Correll, 1950). It has been described as very rare and local, growing in rich sub-acid leaf mold under hemlocks and this was precisely the type of habitat where the Elgin County, Ontario, plants were found.

The site is located in partial shade of an open edge of deciduous second growth, adjacent to a stand of mature hemlocks (*Tsuga*). Other tree species in the area include *Betula lutea* Michx. f., *Acer rubrum* L. and *Fraxinus* sp. Herbaceous plant associates include an abundance of *Maianthemum canadense* Desf., *Medeola virginica* L., *Lonicera canadensis* Bartr., *Trientalis borealis* Raf. and *Polygonatum* sp. A fine colony of *Dryopteris disjuncta* (Ledeb.) C. V. Mort. occurs within sight distance and *Osmunda cinnamomea* L., *Onoclea sensibilis* L., *Botrychium virginianum* (L.) Sw. and *Botrychium matricariaefolium* A. Br. occupy the dried-up melt water pools and lower areas surrounding the site.

Orchid species in the near vicinity include *Goodyera pubescens* (Willd.) R. Br., *Cypripedium calceolus* var. *pubescens* (Willd.) Correll, *Habenaria lacera* (Michx.) Lodd., *Malaxis brachypoda* (Gray) Fern., *Liparis Loeselii* (L.) Richard, and *Aplectrum hyemale* (Muhl.) Torr.

In an account of the discovery of *Isotria medeoloides* in Michigan (Case with Schwab, 1971), Mr. Schwab reported that plants dropped their flowers after just a day or two. In contrast, the Elgin County, Ontario, plants remained at anthesis from May 26 through June 4, an interval of at least ten days. This longevity may be attributed in part to a dip in temperature during the latter part of anthesis from an average daytime high of 24° C and early morning low of 10° C to a daytime high of 12° C and early morning low of 1.5° C. These temperatures were recorded at the Burwell Road Weather Station near St. Thomas and reflect some degree of modification due to the proximity of the city. This is evidenced by the fact that in some localized areas near the site of *Isotria*, planted corn crops received damage from frost. Temperatures then returned to near those at the start.

On June 11 two additional plants were discovered approximately 200 meters from the original site. One of these was in flower and one had only the characteristic whorl of leaves. This flower was never pollinated and the flower dropped from its attachment near the whorl of leaves. In contrast to this, the flowers at the original site

were pollinated and the flowers parted from the top of the long ovary, which by this time had begun to swell noticeably, standing well above the whorl of leaves.

The plants at this site have been well documented by photographs taken by many naturalists and orchid enthusiasts of Ontario and a specimen was collected, dated May 31, 1977, (*Stewart 2500*) and deposited in the herbarium of the Department of Plant Sciences, University of Western Ontario, in London, Canada.

LITERATURE CITED

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